



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,080	03/01/2000	Todd O. Bolken	MICS:0043/99-0634	3543

7590

06/05/2002

Michael G Fletcher
Fletcher Yoder & Van Someren
P O Box 692289
Houston, TX 77269-2289

EXAMINER

LOUIE, WAI SING

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/516,080

Applicant(s)

BOLKEN, TODD O.

Examiner

Wai-Sing Louie

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 2814

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 7, 13-14, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Baerg et al. (US 4,980,019).

With regard to claims 1 and 19, Baerg et al. disclose an integrated circuit encapsulation apparatus (col. 3, line 6 to col. 7, line 43 and fig. 5) comprising:

- A first support plate 37;
- A second support plate 45 proximately positioned with respect to the first support plate;
- A cavity plate 43 positioned between the first support plate and the second support plate, where the cavity plate having an aperture 44 configured to accept a protruding portion of the circuit package (fig. 5) such that the protruding portion of the circuit package contacts the first support plate 37.

With regard to claims 3-4 and 7, Baerg et al. disclose the first support plate 37 is made of stainless steel (col. 5, line 40).

With regard to claim 13, Baerg et al. disclose the second support plate 45 comprises a cavity (fig. 5).

Art Unit: 2814

With regard to claim 14, Baerg et al. disclose a second support plate 45 having a cavity, which is for dispensing molding compound within the cavity (fig. 4 and 5).

With regard to claim 17, Baerg et al. disclose the aperture is configured to yield a circuit package having its non-protruding surface completely cover with a molding compound (fig. 4 and 5).

With regard to claim 18, Baerg et al. disclose the molding compound is resin, which is an insulating material (col. 3, line 28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 8-12, 15-16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baerg et al. (US 4,980,019) in view of Neu (US 5,405,255).

With regard to claim 2, Baerg et al. do not disclose the first support plate is configured to support a plurality of circuit package. However, Neu discloses the first support plate is configured to support a plurality of circuit packages (Neu, fig. 1). One with ordinary skill in the art would appreciate to form a plurality of circuit package at a time. Therefore. It would have been obvious to one with ordinary skill in the art to provide a support plate configured to support a plurality of circuit package in order to minimize the manufacturing cost.

Art Unit: 2814

With regard to claim 8, Baerg et al. do not disclose a plateau, which resides adjacent a recess in the cavity support plate. However, Neu discloses the first support plate 27 comprises a plateau (Neu, fig. 8 area 49), which resides adjacent to a recess in the cavity plate 29. Neu teaches the setup is for deliver the liquefied resin to the cavity (Neu, col. 6, lines 59-67). Therefore, it would have been obvious to one with ordinary skill in the art to provide a plateau and recess on the first support plate in order for the liquified resin to flow.

With regard to claims 9 and 10, Baerg et al. do not disclose a plurality of push rods. However, Neu discloses a plurality of push rods 62 from the first support plate (Neu, fig. 6). Neu teaches the push rods are mechanically controlled to knockout the cavity plate (Neu, col. 7, lines 61-66). Therefore, it would have been obvious to one with ordinary skill in the art to provide a plurality of push rods from the first support plate in order to push out the cavity plate.

With regard to claim 11 and 12, Baerg et al. do not disclose a plurality of rail ejection pins. However, Neu discloses rail ejection pins 64 to knocking out chip, which are mechanically controlled (Neu, col. 7, line 66 to col. 8, line 7). Neu teaches the push rods are mechanically controlled to knockout solidified packages (Neu, col. 7, lines 62-63) and the mold could be reused immediately (Neu, col. 8, lines 6-7). Therefore, it would have been obvious to one with ordinary skill in the art to provide a plurality of rail ejection pins to separate the circuit packages in order to push out the circuit package and the mold could be reused immediately.

With regard to claims 15 and 16, Baerg et al. modified by Neu disclose the aperture is sized to create a peripheral void at the same height as the protrusion portion of the circuit package to permit a molding compound to be deposited. However, the cavity plate can be designed for many sizes and shapes. Therefore, it is obvious to size the aperture having a

peripheral void about the protrusion portion of the circuit package to permit a molding compound to be deposited and is merely a design choice.

With regard to claim 20, Baerg et al. disclose the workpiece is a semiconductor chip (col. 1 line 21). A semiconductor chip could be a memory device.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baerg et al. (US 4,980,019) modified by Neu (US 5,405,255) as applied to claim 2 above, and further in view of Burns (US 5,654,877).

With regard to claims 5 and 6, Baerg et al. modified by Neu would disclose a plurality of circuit package device, but do not disclose a film is comprised of a resilient material. However, Burns disclose a package device comprising a adhesive carrier film 28, which is made of resilient material (Burns, col. 9, line 34). One with ordinary skill in the art would appreciate to have a film carrying the chips to a predetermined location on the first support plate. This would save valuable processing times. Therefore, it would have been obvious to one with ordinary skill in the art to provide a carrier film for the chips to the first support plate in order to save processing times.

Response to Arguments

Applicant's arguments filed 3/27/02 have been fully considered but they are not persuasive. Reference Neu (US 5,405,255) is no longer the primary reference and the argument is moot.

Art Unit: 2814

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474. The examiner can normally be reached on 7:30 AM to 4:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Art Unit: 2814

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

WSI

June 2, 2002


OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800